

Michigan Energy Forum: Energy Jobs and Education

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Why Cluster Strategies?



Evidence and experience base is strong in support of clusters

Consistent with economic development strategy

Is a priority setting mechanism – which sectors have the most pressing talent issues?

Only employers can provide real-time information about demand and other factors in their sector

WDA Clusters

**Information
Technology**



Manufacturing



Health Care



Energy



Agriculture



Energy Cluster Scope of Work

Four Subsectors



**Oil and Gas
Exploration,
Extraction,
Transportation**

**Alternative
and
Renewable
Energy**

Utilities

**Energy
Efficiency**

Energy Cluster workforce analysis

- Energy is vital to the health of the Michigan economy
- Currently 89,000 jobs in Energy Cluster
- Expected to grow 7.1% by 2020
- Hiring will expand as older workers head into retirement
- Energy occupations present many opportunities for workers to learn on the job

The Growing Talent Gap

- Aging workforce of highly-skilled experienced workers
- Attracting from new & more diverse talent pools
- Keeping pace with technological advances
- Closing gaps in workers' skills & credentials



Key Occupations in the Energy Cluster

Occupation	Total Michigan Employment	Employment in Cluster	Median Wage	Total Annual Openings	Real-Time Demand	Education or Training Required
Mechanical Engineers	32,640	12,770	\$41.93	1,297	2,606	Bachelor's degree
Business Operations Specialists, All Other	30,270	5,230	\$29.97	1,155	403	High school diploma or equivalent
Construction Laborers	21,000	8,560	\$16.92	379	858	Less than high school
Electricians	17,550	9,990	\$27.28	547	476	High school diploma or equivalent
Carpenters	13,240	3,300	\$20.24	472	910	High school diploma or equivalent
Plumbers, Pipefitters, and Steamfitters	10,560	6,650	\$26.71	405	306	High school diploma or equivalent
First-Line Supervisors/Managers of Construction Trades and Extraction Workers	9,640	4,240	\$28.25	361	890	High school diploma or equivalent
Engineers, All Other	8,060	2,780	\$41.43	286	211	Bachelor's degree
Operating Engineers and Other Construction Equipment Operators	6,550	3,820	\$21.25	257	107	High school diploma or equivalent
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	6,460	4,240	\$21.54	226	415	Postsecondary non-degree award
Civil Engineers	5,960	3,390	\$32.91	198	336	Bachelor's degree
Electrical Power Line Installers and Repairers	3,640	3,180	\$31.76	100	10	High school diploma or equivalent
Cement Masons and Concrete Finishers	2,900	2,340	\$19.17	98	140	Less than high school
Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	960	760	\$31.48	33	8	Postsecondary non-degree award
Nuclear Engineers	430	390	\$46.91	9	4	Bachelor's degree

Source: Bureau of Labor Market Information and Strategic Initiatives / The Conference Board Help Wanted Online ®

What's In Demand

Mechanical Engineers:

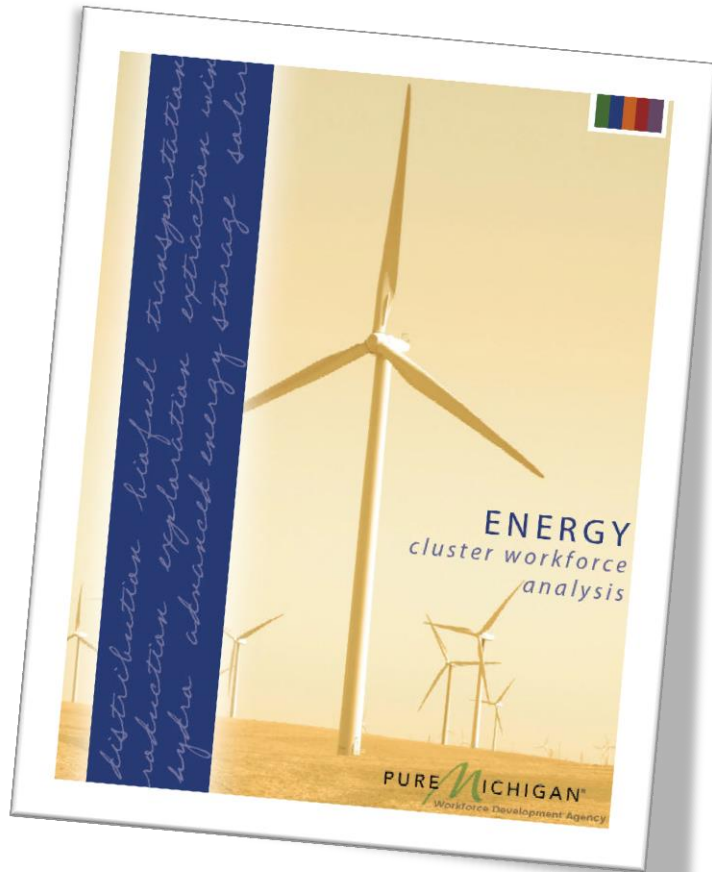
(Mechanical Engineer, Design Engineer, Product Engineer)

Total Employment in Michigan:	39,640
% of total Employment in Energy Cluster:	39.1
% Growth:	9.8%
Education/Training Requirements:	Bachelor's Degree
Earnings:	\$26.96 - \$57.59

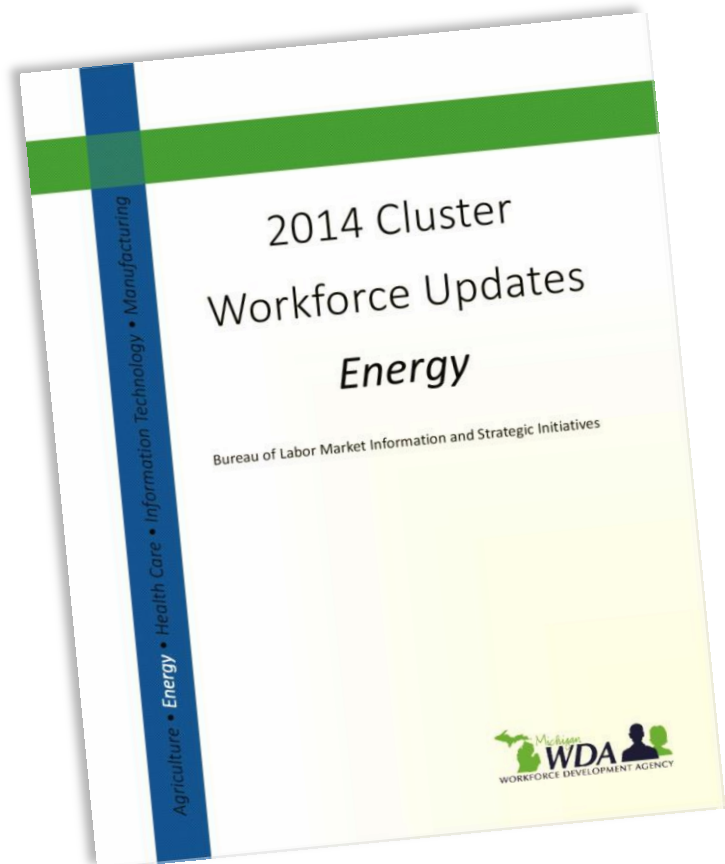
Construction Laborer:

(Construction Laborer, Worker, Helper)

Total Employment in Michigan:	21,000
% of total Employment in Energy Cluster	40.8
% Growth	10.6%
Education/Training Requirements:	Short-term OJT
Earnings:	\$10.26 - \$26.44



Energy Cluster Publications



<http://milmi.org/>



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